ORAL ARGUMENT NOT YET SCHEDULED

Lead Case No. 24-1135 (including consolidated Case No. 24-1251)

IN THE UNITED STATES COURT OF APPEALS
FOR THE DISTRICT OF COLUMBIA CIRCUIT

DENKA PERFORMANCE ELASTOMER LLC,

Petitioner,

v.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY *et al.*,

Respondents.

On Petition for Review of Final Action of the U.S. Environmental Protection Agency, 89 Fed. Reg. 42,932 (May 16, 2024)

PROOF OPENING BRIEF OF ENVIRONMENTAL AND COMMUNITY PETITIONERS

Adam Kron
Deena Tumeh
Kathleen L. Riley
Earthjustice
1001 G St. NW, Ste. 1000
Washington, DC 20001
(202) 794-8039
(202) 793-6482
(202) 797-5227
akron@earthjustice.org
dtumeh@earthjustice.org
kriley@earthjustice.org

Counsel for Concerned Citizens of St. John, RISE St. James Louisiana, Louisiana Environmental Action Network, Texas Environmental Justice Advocacy Services, Air Alliance Houston, California Communities Against Toxics, Environmental Integrity Project, and Sierra Club

Patton Dycus
Environmental Integrity Project
919 Millworks Way
Bozeman, MT 59715
(404) 446-6661
pdycus@environmentalintegrity.org

Abel Russ
Environmental Integrity Project
888 17th St. NW, Ste. 1000
Washington, DC 20006
(802) 482-5379
aruss@environmentalintegrity.org

Counsel for Environmental Integrity Project, Air Alliance Houston, California Communities Against Toxics, and Sierra Club

Dated: January 17, 2025

CERTIFICATE AS TO PARTIES, RULINGS, AND RELATED CASES

Pursuant to D.C. Circuit Rule 28(a)(1)(A), Petitioners Concerned Citizens of St. John, RISE St. James Louisiana, Louisiana Environmental Action Network, Texas Environmental Justice Advocacy Services, Air Alliance Houston, California Communities Against Toxics, Environmental Integrity Project, and Sierra Club submit this certificate as to parties, ruling, and related cases.

I. Parties

Petitioners: Concerned Citizens of St. John, RISE St. James Louisiana, Louisiana Environmental Action Network, Texas Environmental Justice Advocacy Services, Air Alliance Houston, California Communities Against Toxics, Environmental Integrity Project, and Sierra Club (in No. 24-1251); Denka Performance Elastomer LLC (in No. 24-1135); the State of Louisiana and the Louisiana Department of Environmental Quality (in No. 24-1128); the State of Texas (in No. 24-1246); Vinyl Institute, Inc. (in No. 24-1249); American Chemistry Council, American Fuel & Petrochemical Manufacturers, and Louisiana Chemical Association (in No. 24-1250); Huntsman Petrochemical, LLC (in No. 24-1252).

Respondents: the U.S. Environmental Protection Agency; Michael S. Regan, Administrator of the U.S. Environmental Protection Agency.

Intervenors for Petitioners: None.

Intervenors for Respondents: Concerned Citizens of St. John, RISE St. James Louisiana, Louisiana Environmental Action Network, Texas Environmental Justice Advocacy Services, Air Alliance Houston, California Communities Against Toxics, Environmental Integrity Project, Sierra Club, and the Environmental Defense Fund (in all cases except No. 24-1251).

II. Ruling Under Review

New Source Performance Standards for the Synthetic Organic Chemical Manufacturing Industry and National Emission Standards for Hazardous Air Pollutants for the Synthetic Organic Chemical Manufacturing Industry and Group I & II Polymers and Resins Industry, 89 Fed. Reg. 42,932 (May. 16, 2024).

III. Related Cases

Denka Performance Elastomer, LLC v. EPA (5th Cir. 24-60351).

Dated: January 17, 2025

/s/ Adam Kron
Adam Kron

RULE 26.1 DISCLOSURE STATEMENT

Pursuant to Federal Rule of Appellate Procedure 26.1 and D.C. Circuit Rule 26.1, Petitioners Concerned Citizens of St. John, RISE St. James Louisiana, Louisiana Environmental Action Network, Texas Environmental Justice Advocacy Services, Air Alliance Houston, California Communities Against Toxics, Environmental Integrity Project, and Sierra Club state that they are non-profit environmental and community organizations without any parent corporation and without any stockholders.

Dated: January 17, 2025

/s/ Adam Kron
Adam Kron

TABLE OF CONTENTS

TABLE OF AUTHORITIES

Cases **Page(s)**

Statutes **Page(s)**

Federal Regulations **Page(s)**

Federal Register Notices **Page(s)**

GLOSSARY OF ACRONYMS AND ABBREVIATIONS

Pursuant to D.C. Circuit Rule 28(a)(3), the following is a glossary of uncommon acronyms and abbreviations used in this brief:

EPA	Respondents U.S. Environmental Protection Agency and Administrator Michael S. Regan
HON	Hazardous Organic National Emissions Standards for Hazardous Air Pollutants
NESHAP	National Emissions Standards for Hazardous Air Pollutants
SOCMI	Synthetic Organic Chemical Manufacturing Industry

PRELIMINARY STATEMENT

Over 200 facilities in the United States manufacture synthetic organic chemicals, polymers, and resins, and release toxic air pollution that harms human health and can cause cancer. Millions of people across the country face significant risk of developing cancer by inhaling pollution from these facilities. The Clean Air Act requires EPA to reduce this pollution by requiring these facilities to use updated pollution controls and practices and by setting health-protective emissions standards. In the challenged Rule, 89 Fed. Reg. 42,932 (May 16, 2024), EPA revised the standards that apply to these facilities, but EPA fell short. The agency failed to require effective fenceline monitoring for all sources; apply other advances in practices and technology; and adequately reduce cancer risk.

JURISDICTIONAL STATEMENT

This Court has jurisdiction under 42 U.S.C. § 7607(b)(1) to review the Rule, 89 Fed. Reg. at 42,932, JA____. Petitioners timely filed this petition for review within the Act's 60-day window. *See id.*

STATUTES AND REGULATIONS

Pertinent statutes and regulations appear in an addendum to this brief.

STATEMENT OF ISSUES

1. Whether EPA acted arbitrarily by omitting approximately forty percent of facilities from its fenceline monitoring analysis under Clean Air Act section 112(d)(6), 42 U.S.C. § 7412(d)(6).

2. Whether EPA acted unlawfully or arbitrarily by setting fenceline monitoring corrective action levels under section 112(d)(6), *id.*, based on the worst-emitting facilities and by adopting the corrective action level from a different source category.

3. Whether EPA acted arbitrarily by rejecting developments for equipment leaks under section 112(d)(6), *id*.

4. Whether EPA acted arbitrarily by finding health risk "acceptable" despite underestimating emissions and overestimating emission reductions, and by failing to consider additional reductions to provide an ample margin of safety to protect public health under section 112(f)(2), *id.* § 7412(f)(2) .

STATEMENT OF THE CASE

I. Regulated Facilities' Air Emissions Harm Public Health and the Environment.

The facilities covered by the Rule manufacture chemicals and synthetic rubbers and emit hazardous air pollutants in the process. Two of these pollutants are ethylene oxide and chloroprene, which EPA has concluded in recent years are

much more carcinogenic than previously understood.[1] Emissions of these hazardous air pollutants contribute to cancer risk hotspots, such as in St. John the Baptist Parish, Louisiana.[2] Breathing these and other hazardous air pollutants can cause many health harms in addition to cancer, and children are particularly vulnerable.[3]

II. The Clean Air Act Requires EPA to Set and Periodically Update Emissions Standards to Protect Public Health and the Environment.

In 1990, Congress enacted amendments overhauling the Clean Air Act to ensure that EPA effectively regulates hazardous air pollutants. *See Cement Kiln Recycling Coal. v. EPA*, 255 F.3d 855, 857 (D.C. Cir. 2001); *Sierra Club v. EPA*, 551 F.3d 1019, 1028 (D.C. Cir. 2008) ("[T]he text, history and structure of section 112," 42 U.S.C. § 7412, show Congress intended to "[e]liminat[e] much of EPA's discretion"). Congress began by identifying an initial list of hazardous air pollutants for EPA to regulate, including chloroprene and ethylene oxide. 42 U.S.C. § 7412(b)(1). Congress then required EPA to list the categories of sources that emit

---

[1] *See* EPA, Toxicological Review of Chloroprene, EPA-HQ-OAR-2022-0730-0078, at 92, 96 (Sept. 2010), JA____, ____; EPA, Evaluation of the Inhalation Carcinogenicity of Ethylene Oxide, EPA-HQ-OAR-2022-0730-0040, at 1-1 to 1-7 (Dec. 2016), JA____-__

[2] *See* EPA, 2014 Nat'l Air Toxics Assessment (Aug. 2018), https://gispub.epa.gov/NATA/.

[3] *See supra* note 1; 89 Fed. Reg. at 43,058, JA____.

hazardous air pollutants and set technology-based emission standards for each source category. 42 U.S.C. § 7412(c)(1), (d)(1)-(3).

To ensure that standards keep up with technological advancements, Congress required EPA to "review, and revise as necessary" its emission standards, "taking into account developments in practices, processes, and control technologies," at least once every eight years. *Id.* § 7412(d)(6). EPA's long-used framework in a section 112(d)(6) review is to first "identify" developments in work practices, processes, and control technologies that have occurred since the standards were promulgated. 88 Fed. Reg. 25,080, 25,105 (Apr. 25, 2023), JA____. Second, EPA determines whether it is "necessary" to revise emissions standards to include such developments, 42 U.S.C. § 7412(d)(6), by "analyz[ing] [a development's] technical feasibility, estimated costs, energy implications, and non-air environmental impacts," 88 Fed. Reg. at 25,105, JA____.

Within eight years of issuing section 112(d) standards, EPA must "review any residual health risks that [have] not been eliminated by the initial technology-based standards," commonly known as the residual risk review. *Nat. Res. Def. Council v. EPA*, 529 F.3d 1077, 1080 (D.C. Cir. 2008); *see* 42 U.S.C. § 7412(f)(2). This statutory obligation involves a two-step process. *See* 42 U.S.C. § 7412(f)(2)(B); Benzene Rule, 54 Fed. Reg. 38,044, 38,044-45 (Sept. 14, 1989). First, EPA determines whether risks are acceptable under the current standards,

"consider[ing] all health information, including risk estimation uncertainty." 89 Fed. Reg. at 42,969, JA____ (quoting 54 Fed. Reg. at 38,045). A risk above 100-in-1 million is unacceptable. *See Nat. Res. Def. Council v. EPA*, 529 F.3d at 1082; 89 Fed. Reg. at 42,969, JA____. If risks are unacceptable, the agency must promulgate standards that reduce risk to an acceptable level without considering cost. 89 Fed. Reg. at 42,969, JA____. In step two, EPA must revise the standards to provide an "ample margin of safety," 42 U.S.C. § 7412(f)(2), which, according to EPA and this Circuit, occurs "if as many people as possible face[] excess lifetime cancer risks no greater than one-in-one million." *Nat. Res. Def. Council*, 529 F.3d at 1082 (citing Benzene Rule, 54 Fed. Reg. at 38,044-45). According to this Court, the two-step process described above has been "incorporated into the amended version of the Clean Air Act." *Id*.

III. EPA Updated Emissions Standards In the Rule.

In the Rule, EPA revised three sets of emission standards under section 112(d)(6): (1) Hazardous Organic National Emission Standards for Hazardous Air Pollutants ("Hazardous Organic NESHAP" or "HON"), which apply to the Synthetic Organic Chemical Manufacturing Industry ("SOCMI") source category;[4] (2) NESHAP for Group I Polymers and Resins source categories; and (3) NESHAP

[4] When referring to the covered facilities, HON and SOCMI are often used interchangeably. *See*, *e.g.*, 88 Fed. Reg. at 25,145 n.115, JA____.

for Group II Polymers and Resins source categories. 89 Fed. Reg. at 42,954, JA____. To reduce risk under section 112(f)(2), 42 U.S.C. § 112(f)(2), the agency also revised the standards for SOCMI facilities and one type of Group I Polymer and Resins facility.

A. EPA's Section 112(d)(6) Review

1. EPA identified fenceline monitoring as a development for all source categories, but failed to analyze or require it for approximately forty percent of facilities.

EPA identified fenceline monitoring with corrective action as a development for all source categories. *See* 88 Fed. Reg. at 25,142, JA____. This development requires facilities to monitor levels of certain air pollutants at their fencelines and, if measured levels exceed an annual average concentration level set by EPA for each pollutant, take corrective action. *See* 89 Fed. Reg. at 42,937, JA____. EPA concluded that fenceline monitoring is a development because it is "an effective tool when fugitive or ground level releases are significant or where we have identified considerable uncertainties in [hazardous air pollutant] emissions estimates from fugitive emission sources." *Id.* at 43,003, JA____. Thus, fenceline monitoring can help detect and control fugitive emissions—which account for "[t]he majority of emissions from [facilities] covered by the HON and [Group I Polymers and Resins]," 88 Fed. Reg. at 25,142, JA____, and are "difficult to

measure and record." 89 Fed. Reg. at 43,007, JA____. Fenceline monitoring can also help verify compliance with emissions standards. *See id.* at 42,947, JA____.

Although EPA identified fenceline monitoring as a development for all source categories, the agency analyzed and required it only for facilities that use, produce, store, or emit one of six pollutants: ethylene oxide, chloroprene, benzene, 1,3-butadiene, ethylene dichloride, and vinyl chloride. *Id.* at 42,936-37, JA____-___. In doing so, EPA failed to analyze or require fenceline monitoring for approximately forty percent of facilities, including all Group II Polymers and Resins facilities. *See* 88 Fed. Reg. at 25,146, JA____; Fenceline Monitoring Technology Review, EPA-HQ-OAR-2022-0730-0091, at 69, JA____.

EPA collected fenceline monitoring data on only six pollutants from some SOCMI and Group I Polymers and Resins facilities. *See* Fenceline Monitoring Technology Review, EPA-HQ-OAR-2022-0730-0092, at 8-9, JA____-__. EPA considered the data it collected, the availability of fenceline monitoring for the six pollutants, proximity of residences, and other types of monitoring already required. *See* 89 Fed. Reg. at 43,003, JA____. EPA then required fenceline monitoring for only the six pollutants for which it had collected data because that data "confirmed that standards were needed to monitor the true fenceline concentrations of the six selected pollutants due to the difference between the monitor measurements and the model estimations…." RTC, EPA-HQ-OAR-2022-0730-2764, at 237-38,

JA____-__. But the agency did not collect fenceline monitoring data or analyze whether monitor measurements differed from modeled estimations for any other hazardous air pollutants—including pollutants such as methanol and toluene that the majority of these facilities emit and for which fenceline monitoring technology is available. *See* Fenceline Monitoring Technology Review, EPA-HQ-OAR-2022-0730-0092, at 8-9, JA____-__; SOCMI Risk Review, EPA-HQ-OAR-2022-0730-0085, at 39 Tbl. 3.1-1, JA____.

2. EPA set fenceline monitoring corrective action levels that only the worst performers would trigger.

For the six fenceline monitoring pollutants that EPA selected, the agency set "corrective action levels": that is, the annual average concentrations at the fenceline that, when exceeded, would trigger a facility's duty to analyze root cause and take corrective action for the source of the excess emissions. 89 Fed. Reg. at 42,949, JA____. EPA used different methodologies in determining these corrective action levels.

For four of the six pollutants, EPA set corrective action levels "not based on the best performers but rather on the highest value expected on the fenceline from any source": the maximum annual average modeled fenceline concentrations of the highest-emitting facilities. *Id.* at 43,000, JA____. Using this method, EPA selected corrective action levels of 3 $\mu g/m^3$ for 1,3-butadiene; 3 $\mu g/m^3$ for vinyl chloride; 4

$\mu g/m^3$ for ethylene dichloride; and a primary corrective action level of 0.8 $\mu g/m^3$ for chloroprene. *Id.* at 43,231-32, JA____-__.

For benzene, EPA adopted a corrective action level of 9 $\mu g/m^3$ set in 2015 for another source category, petroleum refineries, because "the refinery who set the action level in 2015 for that source category is also a HON facility." 88 Fed. Reg. at 25,145 n.115, JA____; RTC, EPA-HQ-OAR-2022-0730-2764, at 276, JA____. However, according to the most recent data EPA relied on in this rulemaking, the annual average benzene concentration from the highest-emitting facility—including facilities that are also refineries—was only 3.39 $\mu g/m^3$. Fenceline Monitoring Technology Review, EPA-HQ-OAR-2022-0730-0091, at 29 Tbl. 8, JA____. EPA also claimed that adopting the refinery corrective action level was "deemed necessary under the authority of CAA section 112(d)(6)." *See* RTC, EPA-HQ-OAR-2022-0730-2764, at 276, JA____; 88 Fed. Reg. at 25,145 n.115, JA____.

3. EPA did not require any other developments for equipment leaks.

As part of its section 112(d)(6) review, EPA identified developments to address equipment leaks, including optical gas imaging and lowering the threshold that defines a leak, *i.e.* the "leak definition," for certain equipment. *See* Equipment Leaks Technology Review, EPA-HQ-OAR-2022-0730-0090, at 9, JA____; RTC, EPA-HQ-OAR-2022-0730-2764, at 222-23, JA____-__. EPA did not require any developments as part of its section 112(d)(6) review for equipment leaks.

B. SOCMI Residual Risk Review

1. EPA underestimated baseline emissions.

To assess health risk from SOCMI facilities, EPA first estimated baseline risk using modeling based on industry-reported emissions. *See* 89 Fed. Reg. at 42,965; SOCMI Risk Review, EPA-HQ-OAR-2022-0730-0085, App. 1, JA____-__. EPA admitted, however, that it underestimated baseline emissions. *See* 89 Fed. Reg. at 42,965, JA____. In particular, EPA acknowledged that facilities generally use "assumptions and engineering calculations" to estimate their reported fugitive emissions—which "tend to drive risks"—since (says EPA) "it is not practicable to measure" fugitive emissions. 88 Fed. Reg. at 25,097, JA____. When EPA compared modeling based on industry-reported emissions to fenceline monitoring data, EPA found that "overwhelming[ly]," monitored concentrations exceeded modeling—sometimes "by multiple orders of magnitude." RTC, EPA-HQ-OAR-2022-0730-2764, at 293, JA____; *see* Fenceline Monitoring Technology Review, No. EPA-HQ-OAR-2022-0730-0091, at 12-13 Tbls. 2-7, JA____-__.

Relying on these underestimated, industry-reported emissions, EPA found that the maximum baseline risk from SOCMI facilities was 2,000-in-1-million—that is, an excess 2,000 incidents of cancer per one million people exposed over a lifetime—primarily due to emissions of ethylene oxide. *See* 89 Fed. Reg. at 42,962, 42,965, JA____, ____; SOCMI Risk Review, EPA-HQ-OAR-2022-0730-0085, at

59, JA____. Because risk was above 100-in-1 million, EPA found the baseline risk "unacceptable" at step one of the risk analysis and set more stringent requirements for ethylene oxide emissions. 89 Fed. Reg. at 42,971, JA____.

2. EPA also overestimated emission reductions.

To determine the level of post-Rule risk, EPA subtracted from baseline emissions the estimated reductions from compliance with the standards EPA established under step one. 88 Fed. Reg. at 25,100-01, JA____-__. However, EPA overestimated reductions from wastewater units.

Ethylene oxide is released into the air from wastewater collection, storage, and treatment systems. *Id.* at 25,115, JA____; Wastewater Risk Memo, EPA-HQ-OAR-2022-0730-0087, at 5-6, JA____-__. Half of ethylene oxide from wastewater is emitted into the air. Wastewater Risk Memo, EPA-HQ-OAR-2022-0730-0087, at 9, JA____. Because "ethylene oxide production is a very water intensive process," wastewater is a large potential source of ethylene oxide emissions. *Id.* at 10, JA____. EPA estimated that 17 SOCMI facilities operate wastewater streams in ethylene oxide service, *id.* at 1, JA____, and found that ethylene oxide released from wastewater alone resulted in baseline risk of 200-in-1-million, 89 Fed. Reg. at 42,979, JA____.

To reduce risk from wastewater and overall SOCMI risk to the purported 100-in-1 million level, EPA required SOCMI facilities to control ethylene oxide

emissions from wastewater. EPA assumed that facilities would install steam strippers and concluded that these facilities would reduce ethylene oxide wastewater emissions by 98 percent. 88 Fed. Reg. at 25,119 Tbl. 4, JA____; 89 Fed. Reg. at 43,201, JA____; Wastewater Risk Memo, EPA-HQ-OAR-2022-0730-0087, at 8-9, JA____-__.

However, wastewater units upstream of steam strippers—such as drains, storage and treatment tanks, oil-water separators, containers, and surface impoundments—can also emit large amounts of ethylene oxide. Wastewater Risk Memo, EPA-HQ-OAR-2022-0730-0087, at 4-7, JA____-__. The Rule generally requires these upstream units to reduce ethylene oxide by only 95 percent—that is, upstream units can emit up to 2.5 times more ethylene oxide than EPA assumed. *See* 40 C.F.R. §§ 63.133(a); 63.134(a)-(b); 63.135(a)-(d); 63.136(a)-(b), (e); 63.137(a); 63.139(a)-(c).[5] Even a very small additional amount of ethylene oxide from wastewater units could have a significant impact on risk: EPA found that just

[5] The Rule requires most controls to reduce ethylene oxide emissions from wastewater by 95 percent. *See* 40 C.F.R. § 63.139(c). Alternatively, the Rule allows controls to reduce pollutants to a concentration of 20 parts per million or ensure minimum residence times and temperatures. *Id.* Although facilities can use leak-reducing equipment (such as roofs on tanks, covers, and seals) instead of control devices, this equipment presumably does not reduce ethylene oxide by more than 95 percent, given that facilities can choose to use this equipment or controls that reduce emissions by only 95 percent. The Rule also allows facilities to use flares as controls if they meet updated requirements that EPA says can reduce emissions by 98 percent. *See id.* § 63.108(a); 89 Fed. Reg. at 43,023, JA____.

0.06 tons per year of "excess" ethylene oxide emissions from wastewater would "push a facility over" risk of 100-in-1-million. 89 Fed. Reg. at 42,979, JA____.

EPA found that the post-control risk from wastewater and all other units combined was exactly 100-in-1 million. 89 Fed. Reg. at 42,962, JA____. Despite EPA's overestimation of emission reductions, compounding the underestimation of baseline and thus post-control emissions, EPA concluded that the Rule reduced risk to an acceptable level. 89 Fed. Reg. at 42,989-90, JA____-__.

3. EPA did not require any additional reductions to provide an ample margin of safety.

In step two of the risk analysis, EPA claimed that purportedly reducing SOCMI risk to 100-in-1-million also provided an ample margin of safety. 88 Fed. Reg. at 25,122-23, JA____-__; 89 Fed. Reg. at 42,989-90, JA____-__. EPA focused its step two analysis only on ethylene oxide and chloroprene, reasoning that, even after the requirements promulgated under step one, ethylene oxide "drives cancer risk and cancer incidence" from SOCMI facilities and "almost all the remaining cancer risk and cancer incidence is from chloroprene for the Neoprene Production source category." 88 Fed. Reg. at 25,122, JA____. EPA stated that "no other control options for [ethylene oxide] were identified beyond those proposed to reduce risks to an acceptable level." *Id.* And EPA found no cost-effective options for reducing chloroprene from SOCMI facilities. *Id.* at 25,122-23, JA____-__.

EPA estimated that, even after facilities comply with this Rule, 12 percent of the exposed population—over 6.2 million people—will experience risks above one-in-one-million. SOCMI Risk Review, EPA-HQ-OAR-2022-0730-0085, at 6, JA____ (estimating, post-control, 6,270,000 people with risk above one-in-one-million, out of exposed population of "[a]pproximately 50,000,000"). This is only a 13 percent reduction from baseline. *Id.* (estimating 7,170,000 people with risks above one-in-one-million at baseline and 6,270,000 post-control). In contrast, in the 1989 Benzene Rule, EPA ensured that less than one percent of people living within 50 kilometers of facilities would experience risk above one-in-one-million. *See* 54 Fed. Reg. at 38,046.

SUMMARY OF ARGUMENT

I. By failing to analyze fenceline monitoring as a development for approximately forty percent of facilities, EPA acted arbitrarily. EPA identified fenceline monitoring as a development because it helps detect and control the significant fugitive emissions from these facilities. But EPA only analyzed and required fenceline monitoring for some facilities: those that emit, store, or produce just six pollutants. As a result, EPA arbitrarily failed to analyze—and thus failed to require—fenceline monitoring for approximately forty percent of the 218 facilities covered by the Rule. EPA's justification for doing so is circular and irrational and ignores record evidence.

II. By selecting unreasonably high fenceline monitoring corrective action levels, EPA acted arbitrarily. EPA set corrective action levels at concentrations well above the maximum concentrations of all but the worst-emitting facilities. As a result, fugitive emissions will be missed and left uncorrected, undercutting EPA's stated purpose of limiting and reducing fugitive emissions. Moreover, for one corrective action level, EPA unlawfully misread section 112(d)(6) to claim that EPA was required to adopt a higher action level from another source category.

III. In its review of controls for equipment leaks, EPA's conclusion that leakless and low-leak equipment are not cost-effective is not supported by record evidence, and EPA failed to rationally explain its rejection of optical gas imaging.

IV. EPA acted arbitrarily in finding that the Rule reduced SOCMI risk to 100-in-1 million and provided an ample margin of safety. At step one, EPA failed to account for the fact that it based its risk review on underestimated baseline emissions and overestimated emission reductions from wastewater units. EPA's claim that it reduced risk to 100-in-1-million in step one of the risk analysis is also contrary to record evidence. At step two, EPA failed to consider ways to reduce risk from pollutants that create forty percent of post-Rule SOCMI cancer risk and failed to consider further reducing ethylene oxide emissions through requiring controls that destroy 99.9 percent of this pollutant.

STANDING

Petitioners have standing to bring this suit on behalf of their members. *See Friends of the Earth v. Laidlaw Envtl. Servs.*, 528 U.S. 167, 180-81 (2000). Petitioners' members live, work, and recreate near facilities regulated under the Rule. Exposure to hazardous air pollution from these facilities threatens Petitioners' members' health and well-being. *See* Declarations. By allowing excess pollution from these facilities, the Rule prolongs and increases these harms to Petitioners' members. The Court can redress these injuries by ordering EPA to address the issues that Petitioners have raised and remanding the Rule to EPA without vacatur. *See, e.g.*, *Sierra Club v. EPA*, 699 F.3d 530, 533 (D.C. Cir. 2012).

STANDARD OF REVIEW

At issue is whether EPA's action was "arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law." 42 U.S.C. § 7607(d)(9)(A); *see also id.* § 7607(d)(1)(C). This Court reviews EPA's construction of the Clean Air Act de novo. *Loper Bright Enterp. v. Raimondo*, 144 S. Ct. 2244, 2261 n.4 (2024). Under *Loper Bright*, "[i]nstead of deferring to EPA's interpretation of the Clean Air Act, [this Court] must apply what [it] regard[s] as the statute's 'best' reading." *U.S. Sugar Corp. v. EPA*, 113 F.4th 984, 991 (D.C. Cir. 2024).

EPA's action is arbitrary and capricious if the agency "relie[d] upon improper factors, ignores important arguments or evidence, [or] fail[ed] to

articulate a reasoned basis" for its action. *Nat. Res. Def. Council v. EPA*, 822 F.2d 104, 111 (D.C. Cir. 1987). It is also arbitrary and capricious if the agency "entirely failed to consider an important aspect of the problem, [or] offered an explanation for its decision that runs counter to the evidence before the agency." *Motor Vehicle Mfrs. Ass'n v. State Farm Mut. Auto. Ins. Co.*, 463 U.S. 29, 43 (1983).

ARGUMENT

I. EPA Arbitrarily Failed to Analyze and Require Fenceline Monitoring as a Development for Approximately Forty Percent of Regulated Facilities.

EPA identified fenceline monitoring as a development for all three source categories but arbitrarily did not analyze or require it for approximately forty percent of facilities. EPA "fail[ed] to articulate a reasoned basis" for its arbitrarily narrowed analysis and "ignore[d] important arguments or evidence." *Nat. Res. Def. Council*, 822 F.2d at 111.

First, EPA "fail[ed] to articulate a reasoned basis" for refusing to analyze fenceline monitoring as a development for approximately forty percent of facilities. *Id.*; *see* Fenceline Monitoring Technology Review, EPA-HQ-OAR-2022-0730-0091, at 37, JA____. EPA identified fenceline monitoring as a development to address the problem of fugitive emissions, which it concluded is significant across facilities covered by HON and Group I Polymers and Resins. 88 Fed. Reg. at 25,142, JA____. Indeed, "[t]he majority of emissions from [facilities] covered by

the HON and P&R I are fugitive in nature and are often difficult to characterize and quantify." *Id.* (emphasis added). EPA, however, failed to analyze fenceline monitoring at approximately forty percent of those facilities. 88 Fed. Reg. at 25,105, JA____*; see generally* Fenceline Monitoring Technology Review, EPA-HQ-OAR-2022-0730-0091, at 1, JA____ (analyzing technical feasibility, cost, and other factors for fenceline monitoring only at facilities using, producing, storing, or emitting any of the six pollutants). EPA's "failure to address 'an important aspect of the problem' that is factually substantiated in the record" is unreasoned and arbitrary. *Humane Soc'y of United States v. Zinke*, 865 F.3d 585, 606 (D.C. Cir. 2017) (quoting *State Farm*, 463 U.S. at 43).

Second, by identifying but failing to analyze fenceline monitoring as a development for Group II Polymers and Resins sources, EPA failed to rationally apply its regulatory framework and "give[] reasoned consideration to each of the pertinent factors" it committed to analyzing for developments. *Pac. Gas & Elec. Co. v. FERC*, 306 F.3d 1112, 1116 (D.C. Cir. 2002) (citation omitted).

EPA expressly committed to applying its long-standing process for a section 112(d)(6) review in this Rule. 88 Fed. Reg. at 25,105, JA____. Under that framework, EPA first identifies developments for a source category. Second, EPA determines whether it is "necessary" to revise that source category's standards to include the development by analyzing the following factors: "technical feasibility,

estimated costs, energy implications, and non-air environmental impacts." *Id.* EPA identified fenceline monitoring as a development for Group II Polymers and Resins at step one. *See* 88 Fed. Reg. at 25,142, JA____.

Despite its commitment to its customary two-step approach, *id.* at 25,105, JA____, EPA never implemented step two: EPA failed to analyze any of the factors it identified as relevant or determine whether it was necessary to require fenceline monitoring for Group II Polymers and Resins.[6] *See* Fenceline Monitoring Technology Review, EPA-HQ-OAR-2022-0730-0091, at 2, JA____ ("P&R II processes do not emit one of the relevant six HAP included in these proposed fenceline monitoring provisions, and therefore, the proposed fenceline monitoring program does not apply to the P&R II NESHAP."). EPA's failure to "consider[] the … factors that it had previously identified as important … [or] explain why those factors no longer deserve the same weight that they have received in the past" is arbitrary. *Willamette Indus. v. NLRB*, 144 F.3d 877, 880 (D.C. Cir. 1998).

Third, EPA "fail[ed] to articulate a reasoned basis" for limiting its analysis and requirement of fenceline monitoring to six pollutants. *See Nat. Res. Def. Council*, 822 F.2d at 111. EPA states that it analyzed and required fenceline

[6] Two facilities containing Group II Polymers and Resins sources will be included in the fenceline monitoring requirements only because they are co-located with HON sources that will be required to conduct fenceline monitoring for their entire facilities. *See* Fenceline Monitoring Technology Review, EPA-HQ-OAR-2022-0730-0091, App. C, at 1-5, JA____-__.

monitoring of those pollutants because the data it collected showed that monitored emissions were greater than estimates and "confirmed that standards were needed to monitor the true fenceline concentrations of the six selected pollutants." RTC, EPA-HQ-OAR-2022-0730-2764, at 237-38, JA____-___. But EPA did not collect monitored emissions data for any other pollutant.

Approximately two years before the Proposed Rule, EPA issued an information collection request requiring fenceline monitoring data for this rulemaking. Fenceline Monitoring Technology Review, EPA-HQ-OAR-2022-0730-0092, at 7, JA____. EPA solicited these data only from HON and Group I Polymers and Resins facilities involving these six pollutants because it "determined [the pollutants] were the most appropriate, useful, and suitable for inclusion in the fenceline monitoring program." *Id.* Having decided beginning in 2021 not to include other pollutants in the program, EPA decided not to collect data about them. EPA then stated it would not even analyze fenceline monitoring for other pollutants because it lacked the data to do so. *See* RTC, EPA-HQ-OAR-2022-0730-2764, at 300, JA____-__ ("Any additional … monitoring would require data to first determine if modeled fenceline concentrations are not representative of true fenceline concentrations. … In the absence of data …, we did not revise the proposed fenceline monitoring standards to include [additional] monitoring."); *id.*("[T]he standards finalized … are based on data unavailable for other

pollutants."). Such "circular rationale fails to satisfy the requirement of reasoned decisionmaking." *Petro Star Inc. v. FERC*, 835 F.3d 97, 108 (D.C. Cir. 2016).

II. EPA Arbitrarily and Unlawfully Set Fenceline Monitoring Corrective Action Levels.

Corrective action levels are what give the fenceline monitoring requirements teeth: Exceeding an action level triggers a source's duty to locate and correct the cause of excess emissions. Using different and improper methodologies, EPA arbitrarily set corrective action levels that are too high.

A. EPA arbitrarily based four corrective action levels on the highest-emitting facilities.

For four of the six fenceline monitoring pollutants that EPA selected—1,3-butadiene, chloroprene, ethylene dichloride, and vinyl chloride—EPA arbitrarily set corrective action levels based on the maximum annual average modeled fenceline concentrations of the highest-emitting facilities: Specifically, the levels are "not based on the best performers but rather on the highest value expected on the fenceline from any source."[7] *See* 89 Fed. Reg. at 43,000, JA____; Fenceline Monitoring Technology Review, EPA-HQ-OAR-2022-0730-0091, at 22, JA____.

First, EPA's decision to set the corrective action levels based on the single highest-emitting facility for each pollutant is contrary to the agency's stated

[7] For chloroprene, EPA set the pollutant's primary corrective action level on this basis. EPA also set a secondary action level on a different methodology not at issue in this argument. *See* 89 Fed. Reg. at 42,999, 43,002, JA____, ____.

purpose for the fenceline monitoring requirements, which EPA repeatedly described as detecting, "limiting," and "reducing" fugitive hazardous air pollutants.[8] Corrective action levels ensure such reductions. *See*, *e.g.*, 88 Fed. Reg. at 25,142, JA____ ("[W]hen used with a mitigation strategy, such as root cause analysis and corrective action upon exceedance of an action level, fenceline monitoring can be effective in reducing emissions."). By setting the corrective action level based on the highest emitter, EPA has ensured that excess fugitive emissions at the vast majority of sources will be missed and thus fenceline monitoring will not serve the purposes the agency intended.

Second, responding to comments that the inflated action levels would not trigger corrective action, EPA cited data claiming to show a "reduction of benzene fenceline concentrations at petroleum refineries by approximately 30 percent since the inception of the [fenceline monitoring] program" under the 2015 refinery rule. RTC, EPA-HQ-OAR-2022-0730-2764, at 276, JA____. EPA argued that "[w]hile the benzene action level for petroleum refineries was set higher than the concentration most facilities were seeing at the fenceline … the reductions in

[8] *See* RTC, EPA-HQ-OAR-2022-0730-2764, at 277, JA____ ("The purpose of fenceline monitoring work practice standard is to ensure that [facilities] are limiting hazardous air pollutant emissions at the fenceline."); Fenceline Monitoring Technology Review, EPA-HQ-OAR-2022-0730-0091, 4, JA____ ("It is intended … to limit annual emissions of these pollutants by limiting the average concentrations that can occur at a facility's fenceline to 'action levels.'"); 89 Fed. Reg. at 42,947, JA____.

fenceline concentrations of benzene still took place. The EPA anticipates that a similar situation will occur" here. *Id.*, JA____; *see* 88 Fed. Reg. at 25,142, JA____.

EPA's reasoning is irrational and unsupported. The refinery rule contained numerous standards and requirements that EPA set to achieve emissions reductions, including requirements for flares, pressure relief devices, storage tanks, delayed coking units, and fenceline monitoring. *See*, *e.g.*, 80 Fed. Reg. 75,178, 75,182 (Dec. 1, 2015) (detailing requirements). That the refinery rule resulted in emissions reductions does not mean that the corrective action levels in that rule were not set too high, or that greater reductions in emissions reductions would have been achieved had the corrective action levels been set more appropriately. *See Am. Radio Relay League, Inc. v. FCC*, 524 F.3d 227, 241 (D.C. Cir. 2008) ("so conclusory a statement cannot substitute for a reasoned explanation") (citing *AT&T Corp. v. FCC*, 236 F.3d 729, 737 (D.C. Cir. 2001)). EPA failed to meet its "heaviest of obligations to explain and expose every step of its reasoning" because it assumed fenceline monitoring was responsible for those reductions at refineries without explaining or supporting that assumption. *Am. Lung Ass'n v. EPA*, 134 F.3d 388, 392 (D.C. Cir. 1998). Moreover, it is irrational for EPA to "anticipate[] that a similar situation will occur" here, given that, as discussed in the next section, the agency did not act similarly: EPA broke from refinery rule methodology in setting the corrective action level for benzene. *See Missouri Public Service Comm'n v.*

FERC, 337 F.3d 1066, 1070 (D.C. Cir. 2003) ("[F]actual findings are conclusive if, but only if, they are supported by substantial evidence in the record.").

B. EPA unlawfully and arbitrarily applied the 2015 Refinery Rule's benzene corrective action level to facilities covered by this Rule.

Although the maximum annual average benzene concentration of all facilities here was 3.39 μg/m^3, EPA unlawfully and arbitrarily adopted the refinery rule's benzene corrective action level, which was nearly three times higher: 9 μg/m^3. 89 Fed. Reg. at 43,231, JA____; Fenceline Monitoring Technology Review, EPA-HQ-OAR-2022-0730-0091, at 24, JA____.

First, the agency's justification for doing so is a statutory interpretation. The agency asserts that "lowering the action level in the HON would force collocated refineries to comply with the lower limit. Therefore … it was deemed necessary under the authority of CAA section 112(d)(6) to revise the standard to include an action level of 9 μg/m^3 as opposed to 3.39 μg/m^3." RTC, EPA-HQ-OAR-2022-0730-2764, at 276, JA____ (emphasis added). But the "best reading" of section 112(d)(6) is the plain text one, without EPA's implied exceptions for co-located sources. *U.S. Sugar Corp.*, 113 F.4th at 991.

Section 112(d)(6) neither provides nor even suggests it is "necessary" to set standards at levels so weak that co-located sources—i.e., sources at the same facility, but subject to other standards—can meet them without reducing their emissions. To the contrary, it provides that "[t]he Administrator shall review, and

revise as necessary (taking into account developments in practices, processes, and control technologies), emission standards promulgated under this section no less often than every 8 years." 42 U.S.C. § 7412(d)(6). By reading an extra-statutory limitation into this provision as "necessary," EPA contravenes section 112(d)(6) and rewrites this provision to suit the agency's policy preferences. *See Utility Air Regul. Grp. v. EPA*, 573 U.S. 302, 328 (2014) ("an agency may not rewrite clear statutory terms to suit its own sense of how the statute should operate"); *La. Envtl. Action Network v. EPA*, 955 F.3d 1088, 1097 (D.C. Cir. 2020) (rejecting EPA interpretation that artificially limited scope of its obligations under section 112(d)(6)); *Trumpeter Swan Soc'y v. EPA*, 774 F.3d 1037, 1040-41 (D.C. Cir. 2018) (rejecting EPA interpretation that added non-textual basis for denying petitions).

Accepting EPA's interpretation would also thwart the central purpose of section 112(d)(6): ensuring that EPA periodically review its air toxics standards and incorporate technological developments to further reduce emissions. If EPA can write an exception into this provision by insisting revised standards must be weak enough to ensure that certain co-located sources do not have to comply with more stringent standards, it is effectively free to freeze certain requirements in time, justifying that it must retain a co-located source's weaker standards in the revised standards for another source category and back-and-forth, on a potentially endless loop. *See La. Envtl. Action Network v. EPA*, 955 F.3d at 1097 ("'[E]mission

standards' under section 112(d)(6) are not constrained by past, potentially flawed and underinclusive agency action, as EPA now suggests.").

Second, although EPA's reliance on an unlawful statutory interpretation to justify its corrective action level for benzene is reason enough to reject it, the Court should also reject EPA's decision to adopt this level because it is arbitrary. As an initial matter, EPA's justification from its misreading of section 112(d)(6)—that "lowering the action level in the HON would force collocated refineries to comply with the lower limit"—is also arbitrary. RTC, EPA-HQ-OAR-2022-0730-2764, at 276, JA____. Nowhere in the record does EPA explain why the factor of "forc[ing] collocated refineries to comply"—i.e., a source category not covered by this Rule—should carry greater weight than setting fenceline monitoring requirements that are appropriate to the covered sources pursuant to EPA's section 112(d)(6) duties to revise the HON and Polymers and Resins emission standards "as necessary." *Nat. Res. Def. Council v. EPA*, 571 F.3d 1245, 1257 (D.C. Cir. 2009) ("That statement is unsupported by any record evidence and it does not appear in the preamble to the final rule.").

EPA also irrationally ignored more relevant and recent data in the record that would have required a more stringent level. *See Missouri Public Service Comm'n*, 337 F.3d at 1070; *Nat. Res. Def. Council*, 822 F.2d at 111. Specifically, it ignored more recent data specific to SOCMI and Polymers and Resins facilities in favor of

stale, outlier data from the 2015 refinery rule. At the outset, the refinery corrective action levels, like the action levels discussed in the prior section, are arbitrarily based on the single worst-emitting facility.[9] *See supra* at 21-24. By the time EPA proposed the corrective action level for benzene in this Rule, the data it relied on was over a decade old. *See* Fenceline Monitoring Technology Review, EPA-HQ-OAR-2022-0730-0091, at 1, JA____ (discussing 2011 data request).

Indeed, EPA recognizes the arbitrariness of basing the corrective action level on stale, outlier refinery data instead of contemporary data gathered from SOCMI and Polymers and Resins facilities. For example, where industry commenters advocated for higher corrective action levels, EPA responded that "levels set based only on what facilities were previously required to achieve in advance of the standards promulgated in the final rule would not be appropriate because that would ignore the newly required controls." RTC, EPA-HQ-OAR-2022-0730-2764, at 273-74, JA____. That is precisely what EPA has done by adopting the refineries corrective action level of 9µg/m^3. As discussed above, EPA modeled emissions with the Rule's controls in place and found that the single highest fenceline concentration of benzene at the facility-level, thus including any co-located

[9] Of the 142 refineries whose data EPA modeled, the average benzene concentration was 0.8 µg/m^3, and only two refineries had concentrations greater than 4 µg/m^3. Fenceline Monitoring Technology Review, EPA-HQ-OAR-2022-0730-0091, at 1, JA____.

refineries, would be just 3.39 μg/m^3. Fenceline Monitoring Technology Review, EPA-HQ-OAR-2022-0730-0091, 29 Tbl. 8, JA____; *id.* at 25, JA____. By setting aside this calculation in favor of not "forc[ing] collocated refineries" to comply, EPA improperly "ignored the newly required controls" for HON and Polymers and Resins sources and "failed to consider an important aspect of the problem." *State Farm*, 463 U.S. at 43; RTC, EPA-HQ-OAR-2022-0730-2764, at 273-74, 276, JA____-___, ____.

Finally, even if not forcing co-located sources to comply were an appropriate factor to consider, EPA's decision to apply the refinery action level to all facilities does not follow. For one, while EPA does not identify how many refineries are co-located with facilities subject to the Rule, they appear to be a small cohort, comprising at most less than one third of the estimated 128 facilities covered by the fenceline monitoring requirements.[10] Imposing weaker corrective action levels on all facilities covered by the Rule to address this minority of co-located refineries is an ill-tailored, overbroad, and arbitrary solution. *See Missouri Pub. Serv. Comm'n*, 337 F.3d at 1070 ("[F]indings are conclusive if, but only if, they are supported by substantial evidence in the record.").

[10] Based on a search of EPA's ECHO database for facilities subject to 40 C.F.R. Part 63, Subpart H, 42 of those facilities are also subject to the refinery requirements under Subpart CC. *See* EPA, Facility Search – Enforcement and Compliance Data, https://echo.epa.gov/facilities/facility-search (last visited Jan. 17, 2025).

III. EPA's Analysis of Developments for Equipment Leaks is Arbitrary.

A. EPA's explanation for failing to require leakless equipment is irrational.

EPA did not require any leakless equipment, including leakless pumps, connectors, and valves, as part of its section 112(d)(6) review. EPA claims it "determined they are not cost-effective on a [hazardous air pollutant] basis." RTC, EPA-HQ-OAR-2022-0730-2764, at 223-24, JA____-__. This fails for two reasons.

First, no information about the cost-effectiveness of any leakless equipment in reducing total hazardous air pollutants appears in the record. *See* Equipment Leaks Technology Review, EPA-HQ-OAR-2022-0730-0090, at 17, JA____. Courts cannot "ascertain 'a rational connection between the facts found and the choice made' when [the agency] failed to establish the basic facts." *Cal. Pub. Utilities Comm'n v. FERC*, 20 F.4th 795, 803 (D.C. Cir. 2021) (quoting *State Farm*, 463 U.S. at 43). Separately, in its risk review, EPA considered the cost-effectiveness of leakless pumps specifically in reducing one specific hazardous air pollutant: ethylene oxide. Equipment Leaks Risk Review Memo, EPA-HQ-OAR-2022-0730-0003, at 15, JA____. Pumps, however, are a basic piece of equipment and are not limited to use in ethylene oxide service. *See* Equipment Leaks Technology Review, EPA-HQ-OAR-2022-0730-0090, at 8, JA____ (considering pumps generally). If EPA attempted to draw any conclusions about the cost-effectiveness of leakless pumps in reducing total hazardous air pollutants from its numbers specific to

ethylene oxide, it did not explain them. *See Cal. Pub. Utilities Comm'n*, 20 F.4th at 803. Moreover, had EPA compared the cost-effectiveness of leakless pumps in reducing total hazardous air pollutants, it would have had to conclude that this equipment is far more cost-effective on this basis than only with regard to ethylene oxide. Where EPA has analyzed other equipment on both bases, it costs nearly 10 times less to reduce total hazardous air pollutants than to reduce ethylene oxide specifically. *Compare, e.g.*, Equipment Leaks Risk Review Memo, EPA-HQ-OAR-2022-0730-0003, at 15, JA____ ($295,837 for ethylene oxide) *with* Equipment Leaks Technology Review, EPA-HQ-OAR-2022-0730-0090, at 17, JA____ ($30,500 for hazardous air pollution generally). In concluding that leakless pumps are not cost effective in reducing total hazardous air pollutants because they may not be cost effective in reducing ethylene oxide specifically, EPA failed to articulate a "rational connection between the facts found and the choice made" and to "grapple with contrary evidence." *Fred Meyer Stores, Inc. v. NLRB*, 865 F.3d 630, 638 (D.C. Cir. 2017).

Second, even if EPA could draw some relationship between cost effectiveness in reducing ethylene oxide and reducing total hazardous air pollutants, and had rationally explained its attempt to do so, EPA did not consider the cost-effectiveness of leakless connectors and valves on any basis. Indeed, cost effectiveness can vary greatly across types of equipment. *See* Equipment Leaks

Technology Review, EPA-HQ-OAR-2022-0730-0090, at 15-16, JA____-__; Equipment Leaks Risk Review Memo, EPA-HQ-OAR-2022-0730-0003, at 15-16, JA____-__. Courts cannot "ascertain 'a rational connection between the facts found and choice made' when [the agency] failed to establish the basic facts." *Cal. Pub. Utilities Comm'n*, 20 F.4th at 803 (quoting *State Farm*, 463 U.S. at 43). In concluding that all leakless equipment is not cost effective because one type may not be cost effective, EPA failed to articulate a rational connection between the facts found and the choice made. *See id.*

B. EPA's explanation for failing to require low-leak equipment is irrational and unsupported.

EPA also did not require any low-leak equipment, including leakless pumps, connectors, and valves, as part of its section 112(d)(6) review, again claiming it "determined they are not cost-effective on a [hazardous air pollutant] basis." RTC, EPA-HQ-OAR-2022-0730-2764, at 223-24, JA____-__. In particular, EPA stated that "[i]n our technology review memo (EPA-HQ-OAR-2022-0730-0090) we analyzed a 100 ppm leak definition, which would require low emitting valves; and this analysis showed a 100 ppm definition would not be cost effective." *Id.* at 224-25 n.157, JA____-__. This fails for four reasons.

First, EPA failed to provide any record evidence that a 100 ppm leak definition would require low-leak valves. *See Nat. Res. Def. Council*, 571 F.3d at 1257 (agency action is arbitrary if "unsupported by any record evidence"). Second,

even if a 100 ppm leak definition would require low-leak valves, EPA has not explained how, or whether, the cost-effectiveness of a 100 ppm leak definition would relate to the cost-effectiveness of installing low-leak valves. *See State Farm*, 463 U.S. at 43 (agency must supply "a satisfactory explanation for its action"). For example, a 200 ppm leak definition might also require the installation of low-leak valves and be more cost-effective than a 100 ppm leak definition.

Third, even if a leak definition of 100 ppm did require low-leak equipment and the record did show some relationship between the cost-effectiveness of that leak definition and installation of the low-leak equipment, EPA only considered lowering the leak definition for valves as part of its technology review. *See* Equipment Leaks Technology Review, EPA-HQ-OAR-2022-0730-0090, at 17, JA____. EPA did not consider lowering the leak definition to 100 ppm for pumps, connectors, or agitators as part of its technology review, nor did it even claim doing so would require the installation of corresponding low-leak equipment. *See id*. In concluding that all low-leak equipment is not cost effective because one type may not be cost effective, EPA failed to articulate a "rational connection between the facts found and the choice made." *Cal. Pub. Utilities Comm'n*, 20 F.4th at 803.

Finally, like leakless pumps, discussed in the prior section, EPA considered the cost-effectiveness of lowering the leak definition for pumps and connectors to 100 ppm in reducing ethylene oxide, as part of its separate risk review. *See*

Equipment Leaks Risk Review Memo, EPA-HQ-OAR-2022-0730-0003, at 15-16, JA____-__. EPA did not consider the cost-effectiveness of these options in reducing hazardous air pollutants generally. Equipment Leaks Technology Review, EPA-HQ-OAR-2022-0730-0090, at 17, JA____. As discussed in the prior section, *supra* at 29-31, a rational comparison would have shown these options far more cost effective in reducing total hazardous air pollutants than in reducing ethylene oxide specifically. *Compare, e.g.*, Equipment Leaks Risk Review Memo, EPA-HQ-OAR-2022-0730-0003, at 15, JA____ ($295,837 for ethylene oxide) *with* Equipment Leaks Technology Review, EPA-HQ-OAR-2022-0730-0090, at 16, JA____ ($30,500 for hazardous air pollution generally). In concluding that low-leak pumps and connectors are not cost effective in reducing total hazardous air pollutants because they may not be cost-effective in reducing ethylene oxide specifically, EPA failed to articulate a "rational connection between the facts found and the choice made," and failed to "grapple with contrary evidence." *Fred Meyer Stores, Inc.*, 865 F.3d at 638 (internal citations omitted).

C. EPA's explanation for failing to require optical gas imaging is irrational.

EPA admitted that optical gas imaging is "effective at finding large leaks quickly for many [pollutants]," including pollutants emitted by facilities here, but it claims it is less effective at finding low-level leaks or leaks of certain pollutants. RTC, EPA-HQ-OAR-2022-0730-2764, at 223, JA____; 89 Fed. Reg. at 43,014,

JA____. On that basis, EPA determined that "it would not be appropriate to rely exclusively upon [optical gas imaging]" in the Rule. 89 Fed. Reg. at 42,977, JA____ (emphasis added). Nowhere in the record, however, did EPA respond to Petitioners' comments that EPA should require optical gas imaging to be used in conjunction with existing, less-frequent leak detection methods or provide any explanation of its rejection of a requirement to use optical gas imaging in conjunction with other methods. *See* Comments, EPA-HQ-OAR-2022-0730-0175, at 39, JA____. If EPA believes it would be inappropriate under section 112(d)(6) to require optical gas imaging to quickly find large leaks, in conjunction with existing leak detection practices and processes that are less frequent and more focused on smaller leaks, it must say so and explain its decision. *See State Farm*, 463 U.S. at 43 (agency must supply "a satisfactory explanation for its action" and cannot "fail[] to consider an important aspect of the problem").

IV. EPA's SOCMI Risk Review Was Arbitrary.

A. EPA arbitrarily based its SOCMI risk review on underestimated emissions.

EPA claimed that it satisfied its statutory obligation to reduce SOCMI emissions to 100-in-1 million or less, but it "failed to consider an important aspect of the problem": that it based its risk review on admittedly underestimated emissions. *State Farm*, 463 U.S. at 43. EPA conceded multiple times that its risk model "underestimated" emissions, *e.g.*, 89 Fed. Reg. at 42,965, JA____,

sometimes "by multiple orders of magnitude." RTC, EPA-HQ-OAR-2022-0730-2764, at 291, JA____. Of EPA's 31 model-to-monitor comparisons for the six pollutants for which EPA required fenceline monitoring (including ethylene oxide), 30 showed monitored concentrations that were, on average, 60 times higher than the modeled concentrations. Fenceline Monitoring Technology Review, EPA-HQ-OAR-2022-0730-0091, at 12-13, JA____-__.

If EPA had used actual baseline emissions instead of its grossly "underestimated" baseline, the Rule could not possibly reduce emissions to a level that would cause only a 100-in-1-millon risk level, even if the Rule yielded all the reductions EPA claims. Accordingly, EPA's claim that its Rule reduces risks to exactly 100-in-1-million—the maximum risk allowed under section 112(f)(2), *Nat. Res. Def. Council*, 529 F.3d at 1082, and the limit EPA applied here, *supra* at 11-13—is contrary to record evidence. Thus, EPA's claims about post-control emissions and risk are also arbitrary because the agency ignored record evidence that its underestimated baseline emissions undermined its risk conclusions. *See Am. Fed'n of Gov't Emps., Local 2924 v. FLRA*, 470 F.3d 375, 380 (D.C. Cir. 2006) ("Certainly, if the result reached is 'illogical on its own terms,' the [agency's action] is arbitrary and capricious.") (quoting *IRS v. FLRA*, 963 F.2d 429, 439 (D.C. Cir. 1992)).

EPA's reasons for failing to address these problems do not help its cause. EPA argued that it used the best available data and that it has "wide latitude in determining the extent of data-gathering necessary to solve a problem and courts generally defer to the agency's decision to proceed on the basis of imperfect scientific information." 89 Fed. Reg. at 42,965, JA____. Even if EPA gets some deference on data collection, that discretion does not extend to allowing EPA to draw conclusions it knows (or should know) are wrong. Further, the problem with EPA's failure to reckon with its underestimated emissions is not whether EPA used the best available data, but rather how EPA used those data to inform its decisions. Elsewhere, EPA stressed that "it is always important to consider the specific uncertainties of the emissions … information regarding the source category … when deciding exactly what level of … risk should be considered acceptable." RTC, EPA-HQ-OAR-2022-0730-2764, at 148, JA____. EPA failed to do that here. Nor did the agency consider any other ways to account for underestimated emissions.[11]

[11] EPA also asserted that its fenceline monitoring requirements "will limit concentrations of HAP … to the levels expected from our post control emission estimates." RTC, EPA-HQ-OAR-2022-0730-2764, at 146, JA____. As discussed above and is clear from the record, however, the Rule's fenceline corrective action levels are well above post-control fenceline estimates for almost all facilities, and thus will allow emissions far above EPA's post-control estimates. *See supra* at 21-28; Fenceline Monitoring Technology Review, EPA-HQ-OAR-2022-0730-0091, at 24-31 Tbls. 8-13, JA____-__ (showing post-control fenceline concentrations of highest-emitting facilities).

The two cases EPA cited to support its argument that courts "generally defer to the agency's decision to proceed on the basis of imperfect scientific information" do not help the agency. 89 Fed. Reg. at 42,965, JA____. First, this Court in *Sierra Club v. EPA* remanded EPA's emission standards for incinerators, observing that "[w]ith these numbers, EPA's method looks hopelessly irrational." 167 F.3d 658, 664 (D.C. Cir. 1999). The same is true here, given EPA's concession that it vastly underestimated baseline emissions. Second, in *Mexichem Specialty Resins v. EPA*, 787 F.3d 544, 561 (D.C. Cir. 2015), this Court upheld standards where EPA resolved data uncertainty in favor of greater health protections, in contrast to what EPA did here.

B. EPA arbitrarily relied on overestimated emission reductions in concluding that it acceptably reduced risk from SOCMI wastewater units.

EPA found that baseline risk from SOCMI wastewater units is 200-in-1-million. 89 Fed. Reg. at 42,979, JA____. In claiming that it reduced maximum individual risk to 100-in-1-million, EPA assumed that SOCMI facilities would destroy 98 percent of ethylene oxide from wastewater, even though the agency required only 95 percent destruction from many wastewater units. *See supra* at 11-13. EPA based its prediction of 98 percent reduction on an assumption that SOCMI facilities will treat wastewater using steam strippers. *Id*. Yet many wastewater units upstream of steam strippers also emit ethylene oxide, and these upstream units are

generally only required to reduce ethylene oxide by 95 percent (or perhaps less). *Id.*. In particular, EPA noted: "Emission modeling of wastewater collection systems suggests that a large portion of the emissions from wastewater can occur in the collection phase"— upstream of stream strippers. Wastewater Risk Memo, EPA-HQ-OAR-2022-0730-0087, at 4, JA____. In other words, EPA overestimated its Rule's reductions from SOCMI wastewater units and thus underestimated both post-control ethylene oxide emissions and the resulting risk from these units.

EPA failed to account for its overestimated reductions and underestimated emissions. In doing so, EPA arbitrarily "failed to consider an important aspect of the problem," since these higher post-control emissions than EPA assumed could cause maximum individual risk to exceed the limit on acceptable risk—100-in-1-million. *State Farm*, 463 U.S. at 43; *Nat. Res. Def. Council*, 529 F.3d at 1082. For example, reducing even one percent less ethylene oxide from the SOCMI facility with the highest baseline wastewater emissions (56.9 tons/year)[12] would result in 0.57 tons of extra ethylene oxide annually—far above the 0.06 tons/year that EPA found would "push a facility over" 100-in-1-million. 89 Fed. Reg. at 42,979, JA____. EPA's conclusion that it acceptably reduced risk from wastewater units is also arbitrarily illogical given the clear record evidence that the agency overestimated reductions of ethylene oxide from many units and thus

[12] *See* Wastewater Risk Memo, EPA-HQ-OAR-2022-0730-0087, at 11, JA____.

underestimated post-control risk. *See Am. Fed'n of Gov't Emp., Local 2924,* 470 F.3d at 380 ("Certainly, if the result reached is illogical on its own terms, the [agency's action] is arbitrary and capricious.") (citation and punctuation omitted).

In responding to Petitioners' comment pointing out this problem, EPA only discussed treating ethylene oxide emissions using a stripper—completely ignoring upstream emissions. RTC, EPA-HQ-OAR-2022-0730-2764, at 181, JA____. Because EPA has completely ignored this problem of underestimated upstream emissions, EPA's Rule was also not "reasonably explained," *FCC v. Prometheus Radio Project*, 592 U.S. 414, 423 (2021), and the agency failed to supply "a satisfactory explanation for its action." *State Farm*, 463 U.S. at 43.

C. EPA arbitrarily failed to consider ways to minimize the number of people with cancer risk above one-in-one-million.

EPA's conclusion that it provided an ample margin of safety for SOCMI facilities under the second step of the risk review is arbitrary. In this second step, EPA must "protect[] the greatest number of persons possible to an individual lifetime risk level no higher than approximately 1 in 1 million." 54 Fed. Reg. at 38,046; *see Nat. Res. Def. Council*, 529 F.3d at 1082.

First, EPA arbitrarily considered only options for reducing cancer risk from two pollutants, ethylene oxide and chloroprene. EPA reasoned that, even after the requirements promulgated under step one, ethylene oxide "drives cancer risk and cancer incidence" from SOCMI facilities and "almost all the remaining cancer risk

and cancer incidence … is from chloroprene for the Neoprene Production source category." 88 Fed. Reg. at 25,122, JA____. But other pollutants beyond ethylene oxide and chloroprene create forty percent of post-control SOCMI cancer risk. *See* 89 Fed. Reg. at 42,957, JA____; SOCMI Risk Review, EPA-HQ-OAR-2022-0730-0085, at 48, JA____ (identifying at least eight additional pollutants that contribute to cancer risk above one-in-one-million). By leaving much of the risk it identified completely unaddressed, EPA failed to consider an important aspect of the problem it was purportedly trying to (and must) solve: how "to protect the greatest number of persons possible to an individual lifetime risk level no higher than approximately 1 in 1 million." *Nat. Res. Def. Council*, 529 F.3d at 1082; *see State Farm*, 463 U.S. at 43.

Second, despite claiming that no other control options exist to control ethylene oxide beyond those required under step one of the risk analysis, EPA failed to consider that there is an option for further reducing risk from this pollutant: requiring non-flare controls to reduce ethylene oxide from process vents and storage tanks by 99.9 percent. *See* 88 Fed. Reg. at 25,113, 25,122, JA____, ____. In doing so, EPA again "failed to consider an important aspect of the problem." *State Farm*, 463 U.S. at 43.

At proposal, in concluding at step one that its proposed rule would reduce risk to 100-in-1-million, EPA assumed SOCMI facilities would destroy 99.9

percent of ethylene oxide from vents and tanks using non-flare control devices, rather than using flares, which destroy only 98 percent. *See* 88 Fed. Reg. at 25,119 Tbl. 4, JA____; 89 Fed. Reg. at 42,974, JA____. In the Rule, EPA changed course, allowing flares to emit unlimited amounts of ethylene oxide when controlling emissions from vents and tanks. 89 Fed. Reg. at 42,982, JA____. In other words, EPA decided at step one that requiring controls to destroy 99.9 percent of ethylene oxide from vents and tanks was unnecessary to reduce risk to 100-in-1-million. But EPA never considered requiring these non-flare controls to reduce risk below 100-in-1-million at step two of the risk analysis.

V. The Appropriate Remedy is Remand Without Vacatur.

This Court, generally, "do[es] not vacate regulations when doing so would risk significant harm to the public health or the environment." *Wisconsin v. EPA*, 938 F.3d 303, 336 (D.C. Cir. 2019) (citing *Allied-Signal v. Nuclear Regulatory Comm'n*, 988 F.2d 146, 150-51 (D.C. Cir. 1993)). Although the Rule has significant defects, it provides substantial health benefits through its reductions in carcinogens and other harmful air pollutants. *See* 89 Fed. Reg. at 43,032, JA____. Vacatur would erase these benefits, frustrate the Act's core purpose of protecting public health and welfare, and defeat Petitioners' purpose in bringing this suit: reducing air pollution. *See Wisconsin,* 938 F.3d at 336; *Env't Def. Fund v. EPA*, 898 F.2d 183, 190 (D.C. Cir. 1990) (ordering remand where vacatur "would at least

temporarily defeat petitioner's purpose, the enhanced protection of the environmental values covered by the [statute]"). For these reasons, the Court should follow the course it has taken on review of similar air toxics standards and remand without vacatur. *See*, *e.g.*, *La. Envtl. Action Network v. EPA*, 955 F.3d at 1100.

CONCLUSION

For the foregoing reasons, Petitioners respectfully request that the Court remand the above-challenged provisions of the Rule without vacatur.

Respectfully submitted,

/s/ Adam Kron
Adam Kron
Deena Tumeh
Kathleen L. Riley
Earthjustice
1001 G St. NW, Ste. 1000
Washington, DC 20001
(202) 794-8039
(202) 793-6482
(202) 797-5227
akron@earthjustice.org
dtumeh@earthjustice.org
kriley@earthjustice.org

Counsel for Concerned Citizens of St. John, RISE St. James Louisiana, Louisiana Environmental Action Network, Texas Environmental Justice Advocacy Services, Air Alliance Houston, California Communities Against Toxics, Environmental Integrity Project, and Sierra Club

/s/ Patton Dycus
Patton Dycus
Environmental Integrity Project
919 Millworks Way
Bozeman, MT 59715
(404) 446-6661
pdycus@environmentalintegrity.org

Abel Russ
Environmental Integrity Project
888 17th St. NW, Ste. 1000
Washington, DC 20006
(802) 482-5379
aruss@environmentalintegrity.org

Counsel for Environmental Integrity Project, Air Alliance Houston, California Communities Against Toxics, and Sierra Club

CERTIFICATE OF COMPLIANCE WITH TYPE-VOLUME LIMIT

Pursuant to Federal Rule of Appellate Procedure 32(g)(1), D.C. Circuit Rule 32(e)(2)(C), and the Court's Order establishing the briefing format, Doc#2078347 (Oct. 4, 2024), counsel hereby certifies that the foregoing Proof Brief of Environmental and Community Petitioners contains 9,354 words, as counted by counsel's word processing system, and thus complies with the limit of 9,400 words. This document further complies with the typeface and type-style requirements of the Federal Rules of Appellate Procedure, 32(a)(5) and (a)(6), because this document has been prepared in a proportionally spaced typeface using Microsoft Word for Microsoft 365 using size 14 Times New Roman font.

Dated: January 17, 2025

/s/ Adam Kron
Adam Kron